

# Camp++ 0x7e1

The role of open source software in the  
video game industry and gaming  
communities

# Introduction

Dániel 'Houruck' Molnár

<http://houruck.hu>

Hackerspace Budapest

Lakat-LAN

Heavy Gear Assault



# Disclaimer

IANAL

All copyrights belong to their respective owners

# About the talk

This is not a complete list

This is not about GNU/Linux gaming

Today is Video Games Day

# Video Games

Digital media

Interactive arts and sciences

Multidisciplinary works

Code + Content make a game

# Open Source

Open-source software (OSS) is computer software with its source code made available with a license in which the copyright holder provides the rights to study, change, and distribute the software to anyone and for any purpose.



# Open Source

- 1) Free Redistribution
- 2) Source Code
- 3) Derived Works
- 4) Integrity of The Author's Source Code
- 5) No Discrimination Against Persons or Groups
- 6) No Discrimination Against Fields of Endeavor
- 7) Distribution of License
- 8) License Must Not Be Specific to a Product
- 9) License Must Not Restrict Other Software
- 10) License Must Be Technology-Neutral

# Free Software

The word "free" in the name does not refer to price; it refers to freedom.

- The freedom to run the program as you wish, for any purpose (freedom 0).
- The freedom to study how the program works, and change it so it does your computing as you wish (freedom 1). Access to the source code is a precondition for this.
- The freedom to redistribute copies so you can help your neighbor (freedom 2).
- The freedom to distribute copies of your modified versions to others (freedom 3). By doing this you can give the whole community a chance to benefit from your changes. Access to the source code is a precondition for this.

# Free Software

“Nonfree game programs (like other nonfree programs) are unethical because they deny freedom to their users. (Game art is a different issue, because it isn't software.) If you want freedom, one requisite for it is not having or running nonfree programs on your computer. That much is clear.”

**Richard Stallman**

# License legends

## Source code

**OS** OSI approved

**FS** FSF approved

**SS** Shared source

**PS** Proprietary source code is available,  
but it is not OSI or FSF approved

# License legends

## Content

- OC** Open content (FSF approved)
- CC** Creative Commons
- AC** Abandonware content
- FC** Freeware content (NoDerivatives)
- PC** Proprietary content

# Industry

## AAA

- Mainstream
- High economic risk

A lot of time

A lot of resources

A lot of money

# Industry

## Indie

- Published or produced outside mainstream means
- Often without the financial aid of a publisher
- Focus on innovation
- Rely on digital distribution

# Community

- Modders
- ROM hackers
- Homebrew (proprietary hardware)
- Fangames
- Dōjin games (japan)

# Engines and frameworks

## Commercial AAA Engines

Amazon Lumberyard **PS**

Unreal Engine 4 **PS**



**UNREAL**  
**ENGINE**



*lumberyard*  
Beta

# Engines and frameworks

## Open Source

Blender Game Engine **OS FS**

Godot **OS FS**

Solarus **OS FS**

Spring Engine **OS FS**

Pyrogenesis **OS FS**

OGRE **OS FS**

StepMania **OS FS**

Phaser **OS FS**

Libgdx **OS FS**

MonoGame framework **OS FS**

Torque 3D **OS FS**

HPL Engine 1 **OS FS**

Irrlicht Engine **OS FS**

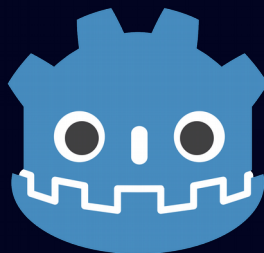
LöVE **OS FS**

Cube 2 **OS FS**

Ren'Py **OS FS**

Allegro **OS FS**

Cocos2d **OS FS**



# APIs and libraries

## Open Source

OpenGL OS

MojoShader OS

OpenPlay OS

ENet OS

Vulkan OS

SDL OS

RakNet OS



# Tools and open formats

## Open Source

Recast **OS**

OpenSteer **OS**

Bullet physics library **OS**

Twine **OS**

GIMP **OS**

Ogg Vorbis **OS**

Audacity **OS**

Tiled **OS**

ODE **OS**

Chipmunk2D **OS**

Yarn Spinner **OS**

Krita **OS**

Speex **OS**

sfxr **OS**



# Content resources

## Open Source

<https://opengameart.org>



Free, legal art  
for open source game projects

# Source code and content

## Open Source games

- Open-sourcing

- Open-source and free content

- Open-source with own but non-free content

- Open-source remakes with non-free content

## Source available commercial games (non OSI, non FSF)

- Games with released source code

- Games with available source code (leaked)

- Games with reconstructed source code

- Software Development Kits

# Source code and content

## Open-sourcing

Games/Engines gone OS

Proprietary developed games, later opened under varying licenses



# Source code and content

## Open-source and free content

Hedgewars OS FS OC

Teeworlds OS FS OC

Freedoom OS FS OC

OpenArena OS FS OC



# Source code and content

## Open-source with own but non-free content

Frets on Fire **OS** **FS** **OC** **PC**

Urban Terror **OS** **FS** **PS** **PC**

OpenTTD **OS** **FS** **CC**

PlaneShift **OS** **FS** **PC**



# Source code and content

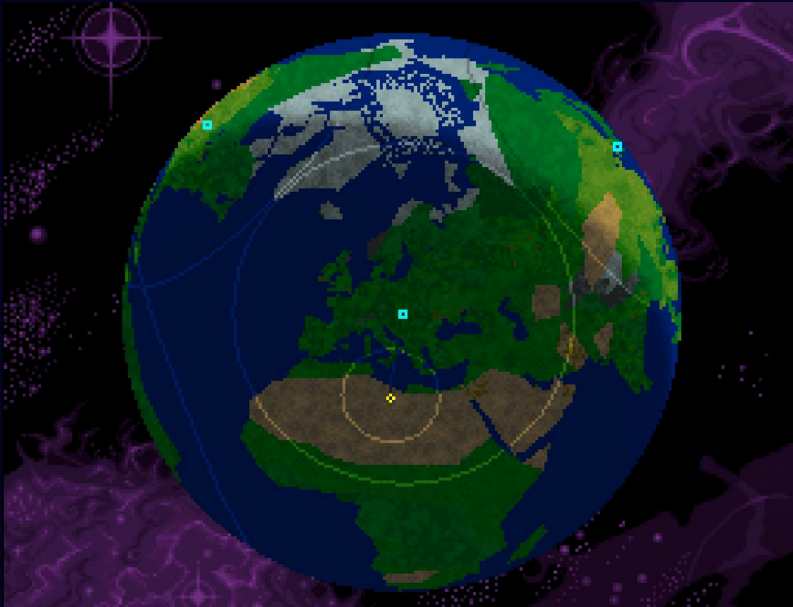
## Open-source remakes with non-free content

OpenXcom OS FS OC PC

OpenMW OS FS PC

OpenRA OS FS OC FC

ScummVM OS FS AC FC PC



# Source code and content

## Games with released source code

Abuse **OS** **FS** **OC** **PC**

FreeAllegiance **SS** **PC**

Aliens versus Predator (1999) **PS** **PC**

Aleph One **OS** **FS** **PC**



# Source code and content

## Games with available source code (leaked)

Ultimate Mortal Kombat 3 (PSX) **PS PC** Turok: Dinosaur Hunter (N64) **PS PC**  
Wing commander series **PS PC** Trespasser **PS PC**



# Source code and content

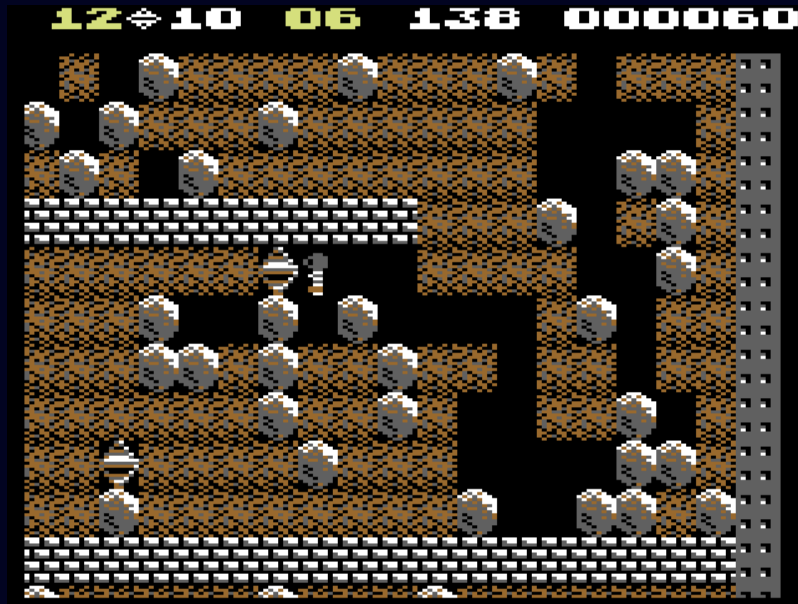
## Games with reconstructed source code

Boulder Dash **PS** **PC**

Super Mario Bros. **PS** **PC**

The Last Ninja **PS** **PC**

PowerSlave **PS** **PC**



# Source code and content

## Software Development Kits

Half Life 1 SDK **PS PC**

Source SDK **PS PC**

```
56 void CGib :: SpawnStickyGibs( entvars_t *pevVictim, Vector vecOrigin, int cGibs )
57 {
58     int i;
59
60     if ( g_Language == LANGUAGE_GERMAN )
61     {
62         // no sticky gibs in germany right now!
63         return;
64     }
65
66     for ( i = 0 ; i < cGibs ; i++ )
67     {
68         CGib *pGib = GetClassPtr( (CGib *)NULL );
69
70         pGib->Spawn( "models/stickygib.mdl" );
71         pGib->pev->body = RANDOM_LONG(0,2);
72
73         if ( pevVictim )
74         {
75             pGib->pev->origin.x = vecOrigin.x + RANDOM_FLOAT( -3, 3 );
76             pGib->pev->origin.y = vecOrigin.y + RANDOM_FLOAT( -3, 3 );
77             pGib->pev->origin.z = vecOrigin.z + RANDOM_FLOAT( -3, 3 );
78
79             /*
80             pGib->pev->origin.x = pevVictim->absmin.x + pevVictim->size.x * (RANDOM_FLOAT ( 0, 1 ) );
81             pGib->pev->origin.y = pevVictim->absmin.y + pevVictim->size.y * (RANDOM_FLOAT ( 0, 1 ) );
82             pGib->pev->origin.z = pevVictim->absmin.z + pevVictim->size.z * (RANDOM_FLOAT ( 0, 1 ) );
83             */
84
85             // make the gib fly away from the attack vector
86             pGib->pev->velocity = g_vecAttackDir * -1;
87
88             // mix in some noise
89             pGib->pev->velocity.x += RANDOM_FLOAT ( -0.15, 0.15 );
90             pGib->pev->velocity.y += RANDOM_FLOAT ( -0.15, 0.15 );
91             pGib->pev->velocity.z += RANDOM_FLOAT ( -0.15, 0.15 );
```



# Resources used

## Free Software Directory

<https://directory.fsf.org/wiki/Category/Game>

## Ryan 'Icculus' Gordon

Open Source Tools for Game Development  
@icculus

## Frank Cifaldi

It's Just Emulation!  
@frankcifaldi

## Jon Manning

Making Night in the Woods Better with Open Source  
@desplesda

# Thank you

Dániel 'Houruck' Molnár

<http://houruck.hu>

## Programs used

Firefox OS FS

LibreOffice Impress OS FS

Notepad++ OS FS